

WHAT IS CLAIMED:

14. Apparatus for the detection of microbes on a non-living surface or in air or liquid comprising:
  - a. means for directing electromagnetic radiation towards the sample, said means adapted to emit radiation energies capable of exciting at least one intrinsic microbial fluorophore;
  - b. at least one detector for electromagnetic radiation capable of converting the emitted, or reflected/scattered radiation into electrical signals, said detector adapted to detect electromagnetic radiation at wavelengths above 320 nm to detect the minima and maxima associated with the fluorescence emission of said microbial fluorophores; and
  - c. means for analyzing the electrical signals corresponding to the fluorescence of the intrinsic microbial fluorophores, and the reflected/scattered excitation energies to determine the presence of microbes.
15. The method as defined in claim 1 wherein the electromagnetic waves are directed towards the microbes in time-modulated pulses.
16. The apparatus defined in Claim 14 wherein the means for directing electromagnetic radiation includes means for time-modulating the electromagnetic radiation.